# Political Self-Serving Bias and Redistribution. Version 1.5

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#### Abstract

In this article, we explore the impact of *self-serving biases* on the demand for redistribution. To do so, we run an experiment in which participants vote on redistribution after having earned income in a real effort task. Participants are randomly assigned to either a hard or easy task. However, because we withhold the information about the relative task difficulty there is ambiguity as to whether success or failure should be attributed to internal or external factor. Our results confirm and expand previous findings on the self-serving bias: successful participants ask for less redistribution because they are more likely to attribute their success to their effort rather than luck. The innovative contribution of our work consists in mimicking political debates, in which participants have very limited information on the exogenous factors at stake. In this regard, our findings show that the impact of the self-serving bias is much more far-reaching than what is commonly hold. We also discuss the implications of the self-serving bias for the institutional framework.

**JEL codes:** K10, H3.

**Keywords:** Redistribution, self-serving bias, experimental, separation of powers, veil of ignorance.

## 1 Introduction

The last decades have seen resurgence and worsening of inequalities in democratic countries. Various works have documented this phenomenon (World: Atkinson (2003), Piketty & Saez (2006); US: Piketty & Saez (2003); Germany: Dustmann et al. (2009)). In this article we seek to understand the failure of the political market in developed countries to fight the rising inequalities. Previous works in political economy have addressed this issue from different perspectives. Few works have sought to understand why voters do not ask for higher redistribution levels (public preferences, efficiency concerns, prospect of upward mobility). Other scholars have dealt with the structure of the political market to explain the persistence of inequalities (multidimensionality of the political space, low turnout). A third set of works

investigated the reasons which drive representatives to limit redistribution (lobby, policy preferences). In this article, we are mainly interested in the latter aspect. In particular we study whether success reduces the demand for redistribution.

The ambition of our paper is not to investigate how politicians and voters may choose low levels of taxation in a self-interested rational manner. On the contrary, our primary objective is to investigate how individuals who are asked to decide on the level of redistribution may be affected by their identity in an unconscious manner. Our goal is to develop the literature on redistribution by investigating the impact of psychological biases due to the very identity of the decision-maker. In other words, we propose to explore to which extent wealthy individuals (resp. poor individuals) advocate against (resp. for) redistribution because they believe that they deserve their wealth (resp. do not deserve their poverty).

The subsequent analysis builds on previous works on the self-serving bias (SSB). Theories about the SSB postulate that individuals are more likely to attribute their failure to situational factors than their success. In other words, the SSB claims that, when an individual succeeds at a task, she tends to congratulate herself for her efforts, while she is more prompt to blame the situation when she fails. The SSB predicts therefore a tight relationship between income and the perception of the causes of poverty: wealthier individuals are more likely to believe that they deserve their wealth. Considering the above discussion, this might have two effects on the political market. First, the self-serving bias may affect voters whenever they believe that they are successful in life: because people are not willing to recognize that their success is due to random events, they are more likely to support low tax rates. Second, the SSB might also be at play in the supply side of the political market: because politicians are elected, they can see their electoral success as the result of their efforts, which is likely, in turn, to make them believe that redistribution is unfair.

Recent works in experimental economics have started to explore the relationship between the SSB and the demand for redistribution. Our study goes one step further in this direction. Previous works have reproduced games in which participants face different situations (tasks) to observe how the relative success influences their demand for redistribution. In such experiments, luck components were introduced to disturb the one-to-one relationship between effort and outcome. These works gave however full information about the set of situations participants could possibly face, which, we believe, is far from the real political process where citizens have very limited information about their compatriots' experience.

Our research question is the following: Does belonging to the group of succeeding people affect the demand of redistribution by changing one's perception of the causal factors which determine success? Our paper concludes on two main findings. First, individuals who are successful at a task ask for less redistribution for this specific task as a consequence of the self-serving bias. Second, successful participants to one task display stronger preferences for non-redistributive systems for future unknown tasks. Moreover, we also find some evidence suggesting that successful and less-successful individuals update their beliefs in different manners when they benefit from redistribution.

These findings have considerable consequences for the law and economics literature, since the self-serving bias impacts both the demand and the supply sides of the political market. Our work shows that such psychological biases affect the perception of reality, and the result of the decision-making process. What is the impact on the production of legal rules if biased voters are electing biased representatives? Would the resulting distortion lead toward more or less efficiency? Although our discussion limits to debates on the institutional framework, we aim at providing some elements for further discussions.

The rest of the paper is organized as follows. Section 2 introduces previous experiments on the self-serving bias, and redistribution systems. Section 3 describes the experiment and presents some predictions. Section 4 displays the results. Section 5 discusses the results in the light of two influential political theories. Section 6 concludes.

## 2 Literature Review

### 2.1 Previous works on the political market and inequalities

Political economists have used recent works on inequality to question the efficiency of the democratic process to achieve more equal societies, and to challenge the standard political economy literature initiated by Downs. Indeed, while the median voter theorem predicts higher redistribution levels in societies with more wealth concentration, little empirical evidence has been found to support this idea. On the contrary, the recent worsening of income inequality indicates that the political process is not able to resorb inequalities as much as the Downsian theory predicts. Worse, Bernasconi (2006) observes that wealthy individuals are the most fervent supporters of the existing taxation systems, and the burden of taxation is perceived as too heavy for poor and middle-class individuals.

Several works have investigated the reasons of the political market's failure to achieve more equal societies. So far, three kinds of arguments have been made to explain it. The first type of arguments focuses on the demand side of the political market: inequality persists because voters prefer low redistribution levels. A second kind of arguments focuses on the mechanisms of the political market: special features of the political market explain why the outcome of the political process departs from the voters' preferences. Third, some works have focused on the supply side of the political market: elite members ruling the country have particular preferences and interests, which make them choose less redistribution than what the median voter would choose.

As far as the demand side is concerned, various theories have been put forward to explain both rational and non-rational choices of the citizens in the case of redistribution. They can be summarized in four major contributions.

The first theory aiming at explaining individual preferences for redistribution draws from the neoclassical framework of self-interested agents: Citizens are mainly concerned by their individual well-being, and decide on the level of redistribution according to the relative benefits they will derive from the system. Empirical investigations have found however limited evidence supporting this approach. On the one side, Corneo & Grüner (2002) claims that self-interest plays a role in determining preferences for redistribution. On the other side, Milanovic (2000) concludes that the median voter effect is very limited to account for the heterogeneity of the redistribution systems. In a very influencing work, Fong (2001) finds that individual income is a very poor predictor of the demand for redistribution. Boarini & Le Clainche (2009) shows that self-interest theories, which discuss redistribution as a social insurance, find no empirical support in France.

The second theory proposed to explain the preferences for redistribution postulates that social and public values influence individuals. This framework, which has received a growing attention since the 2000s, considers that individuals care about social welfare, and might therefore be motivated by ethics or efficiency concerns. Fong (2001) finds some support for this theory, but fails at distinguishing whether the observed facts are driven by altruism or reciprocity. The major investigations in this line have focused on the beliefs of the determinants of poverty. Alesina & Angeletos (2005) showed that individuals who believe that poverty is mainly exogenous are more likely to support redistribution. Bernasconi (2006) found similar results, and also emphasized that beliefs about the role of family wealth for future opportunities also influence redistribution preferences. Boarini & Le Clainche (2009) suggested that both beliefs about the causes of poverty and the beliefs about reciprocity of redistribution affect the demand for redistribution.

A third branch of research has devoted its attention to the social rivalry effect, which states that individual welfare is determined by the relative position in societies. According to this theory, citizens would anticipate the effects of redistribution on their relative position, and the median voter would therefore vote for lower levels of redistribution to safeguard her relatively high social status. Corneo & Grüner (2002) finds some support for this theory. Keely & Tan (2008) also finds some empirical evidence supporting the preference-based theories, which postulate that identity matters for redistribution choices in so far as people care about what others do in other groups.

Finally, some works have intended to test empirically Hirschman's theory of the tunnel effect. This theory, also referred as POUM (Prospect Of Upward Mobility), claims that citizens take into consideration their expectations about their future income when voting for redistribution: higher expectations would therefore reduce the demand for redistribution. Keely & Tan (2008) investigated this question but found mixed evidence supporting this theory. Piketty (1995) provides a theoretical framework in which the heterogeneity of redistribution preferences is explained by the various income trajectories.

Second, political economists have also investigated how the structure of the political market might account for the low levels of redistribution. Harms & Zink (2003) start from the observation that not all citizens take part to the vote, leading to a turnout below 100%. The authors suggest then that, if the decision to vote is negatively correlated with income, the *politically decisive voter* will no longer be the median voter but a wealthier citizen. This would, in turn, lead to lower redistribution policies. Roemer (1998) develops an electoral model with a multidimensional political space in which voters may choose between two parties, which compete on both taxation and a non-economic outcome. The author shows that, when the non-economic policy is a salient issue, redistribution might be lower than what the median voter would have desired.

Last but not least, the persistence of inequalities is likely to be due to the behavior and the preferences of the politicians. Several works have departed from the classical view of Downsian politicians, and have started to acknowledge that politicians are also driven by intrinsic preferences for some policies (Acemoglu et al. (2013)). Harms & Zink (2003) argue that this may explain why politicians refrain from radical redistribution. The authors also underline that lobby activities may also be the cause of the low redistribution levels: because the group of wealthy individuals is small and is very rich, it can engage in very efficient lobbying to influence both politicians and voters.

Discussions about the singularity of the preferences of the ruling elites can be approached in two opposite views. On the one side, the theory of capture developed by libertarians anticipates that politicians try to take advantage of their position to turn the system to their benefits. Considering that most politicians belong to the top percentiles of the wealth distribution<sup>1</sup>, they would be likely to keep low taxes. On the other side, Marxist theories also argue that the political system is part of the superstructure that aims at maintaining the capitalist system alive. According to such views, politicians would be the product of the existing system, and would therefore seek to maintain the system. In other words, because politicians benefit from the system, and, therefore, from inequalities, they are likely to keep low tax rates.

### 2.2 Behavioral and experimental works

Behavioral studies on the impact of the self-serving bias on redistribution choices are divided into two branches of research: one on the self-serving bias and one on redistribution choices. These two streams of research have evolved separately since the 70s but have recently merged in the past years.

Literature on the self-serving bias In a very influential paper, Miller & Ross (1975) summarized previous studies in psychology that attempted to assess the self-serving bias. In their paper, they defined the *self-serving bias* as the fact to "attribute success to our own dispositions and failure to external forces". Following this definition, they decomposed the *self-serving* bias into two phenomena: on the one hand, the fact that some people indulge in self-protective attributions under conditions of failure, and, on the other hand, the fact that some others indulge in self-enhancing attributions under conditions of success. They further argue that the combination of these two phenomena leads to a difference in causal attributions between successful and disappointed individuals.

The self-serving bias has become a broadly recognized cognitive mechanism in Western countries, although some papers have questioned its universality (Mezulis et al. (2004)). The law and economic literature has devoted a strong attention to the self-serving bias and more specifically to its role for the definition of fairness. Some authors showed indeed that a low rate of settlement could emerge from litigants affected the self-serving biases (Loewenstein et al. (1993), Babcock et al. (1995), Babcock & Loewenstein (1997)).

**Experimental literature on the determinants of redistribution preferences** Since the end of the 70s, several works in the economic literature have studied the determinants of

 $<sup>\</sup>label{eq:linear} {}^{1} http://www.nytimes.com/2014/01/10/us/politics/more-than-half-the-members-of-congress-are-millionaires-analysis-finds.html? r=0 (Last access: January 2015)$ 

redistribution choices. Two pioneers experimental works have aimed at investigating Rawls' predictions on distributive justice.

In a first work, Frohlich et al. (1987) sought to determine which redistribution scheme people tend to consider as fair. To do so, they constructed an experiment in which they reproduced Rawls' *Veil of Ignorance* (VoI), and in which participants had limited information about their own situation. Under this VoI, they asked people to choose between four justice principles, among which Rawls' *difference principle* (maximization of the floor income). Their data concluded that Rawls' difference principle was the least preferred redistribution mechanism.

In a second major work, Frohlich & Oppenheimer (1990) proposed to investigate whether the acceptance of justice principles was determined by economic experience. The results of their experiment showed that the level of satisfaction with redistributive system was increasing over time, i.e. the more participants experienced it, for both tax payers and tax receivers.

This high level of satisfaction for both tax payers and tax receivers was however contested in subsequent studies. As a matter of fact, in a recent experiment Cabrales et al. (2012) showed that wealthy and non-wealthy participants display different redistribution preferences. More explicitly, they found that wealthy participants typically vote *against* redistribution, while non-wealthy participants, on the contrary, usually vote *for* redistribution.

Two recent works have contributed to expand the knowledge on the determinants of redistribution preferences.

First, Schildberg-Hoerisch (2010) proposed to disentangle two effects of the VoI on redistribution choices. In her article, Schildberg-Hoerisch claims indeed that decisions made under the VoI result from two factors, namely risk-aversion and social preferences. Her experimental protocol consisted in investigating whether uncertainty created by the VoI increases the demand for redistribution as a consequence of selfish or altruistic interests. She found that selfishness is the main factor driving the increase in redistribution following the introduction of the VoI.

Second, Gerber et al. (2013) proposed an experiment with various degrees of ignorance. In their experiment, the authors considered several treatments with different sets of information with regard to participants' future identity. They partly confirmed Rawls' assertion by showing that the level of redistribution was decreasing with the level of information.

Several results can be retained from the existing literature. First, the literature has extensively showed that preferences over redistribution systems are very heterogenous among the population (Gerber et al. (2013), Cappelen et al. (2007), Frohlich et al. (1987), Frohlich & Oppenheimer (1990)). Second, it has also been emphasized that redistribution is mainly determined by self-interests, but *not entirely* (Cappelen et al. (2007), Kataria & Montinari (2012), Klor & Shayo (2010)). Third, Kataria & Montinari (2012) have showed that the demand for redistribution depends on the perception of the causes of poverty. In an influential experimental work, Konow (2000) showed indeed that disinterested observers act according to the accountability principle, i.e. they are more likely to reward individuals based on their efforts, and to compensate back luck. Eisenkopf et al. (2013) also showed that individuals tend to compensate back luck in settings with unequal opportunities. Kataria & Montinari (2012) and Gerber et al. (2013) are the two papers closest to our work.

First, Kataria & Montinari (2012) have showed that (i) when income is determined by luck, the demand for redistribution is higher than when it is generated by ability, (ii) when people do not know their relative position, they ask for more redistribution, and (iii) people are affected by the self-serving bias even when they act as third parties. Our experiment differs in several dimensions. First, in their setting, participants have a perfect information about the determinants of the individual payoffs (luck vs. effort). However, in every day debates about redistribution, it is rarely known to which extent luck objectively determined each individual situation. On the contrary, our protocol aims at mimicking these debates, and leaves people uninformed about the extent to which relative success is exogenously determined. Second, in the above setting, participants are asked to act as third parties just after they have been asked to express their preferences for themselves. This set-up may contaminate the data since individuals are more likely to adjust their declaration of what is fair to what they have declared for themselves. Wealthy participants are therefore likely to declare that low taxation levels are fair, not because of the SSB, but because of consistency with their previous answer (in which they had interests at stake). Third, in the unequal opportunities treatment, participants are able to form posterior beliefs about their relative position after the production phase (and before the shock). In our protocol, participants cannot form any posterior about the difficulty of the task they were assigned to, and cannot therefore update their beliefs about the exogenous determination of their situation.

Second, our paper relates to Gerber et al. (2013) from which it takes the redistribution systems. In their paper, the authors analyze the choices of redistribution systems under different informational sets. First, they define the *libertarian rule*, under which no redistribution occurs, and participants keep their own production. Second, they introduce the *egalitarian rule*, under which the total production is shared equally among participants whatever their effort level. Third, they present the *proportional rule*, under which participants receive a share of the total production proportional to their investment. Our protocol keeps these three systems, and refers to them respectively as the *libertarian*, the *egalitarian* and the *social-liberal* systems.

The main innovation of our paper consists in creating a framework with total uncertainty about the causes of relative success. In everyday situations, when citizens debate on the level of redistribution, they only know (i) the situation they have faced, and (ii) their relative success. Because they do not know the situations other citizens have faced, nor do they observe others' efforts, they are not able to infer what is due to luck and what is due to effort in their society. In such a context of total uncertainty (probabilities and states of the world are unknown), people should, as Rawls assumes, have similar beliefs about the determinants of poverty. However, as our article shows, even in case of total uncertainty, people still update their beliefs about the determinants of success. As we show, this change in beliefs affects the demand for redistribution.

## 3 The Experiment

Our experiment explores the potential consequences of the self-serving bias on redistribution issues. Our protocol aims therefore at generating a self-serving bias among participants, and capturing the effects of this bias on the demand for redistribution.

### 3.1 Design

The subjects take part in two experiments. They were told that these two experiments were separate, and they were given instructions at the beginning of each experiment. Instructions are available in the appendix.

**Experiment 1: Disinterested Dictator Game (DDG)** The first experiment consisted of a real effort task and a redistribution decision. In the real effort task participants had to count the number of zeros and ones on a series of lines. For each correct answer participants were rewarded by a certain number of tokens, depending on the task she was assigned to. Individuals were told that they could be assigned either to an *easy* or to a *hard* task with equal probability. Participants were also told that they could virtually achieve the same number of tokens with the *hard* and with the *easy* task. At no point in the experiment, participants' tasks, they were unable to deduce which task they were actually assigned to.

The difference in the difficulty level between the two tasks was subject to variation across sessions (standard vs. gap treatment). However, we found that the absolute difficulty level did not affect results. In the main text we pool the data of all sessions. All results hold qualitatively when we analyze the two treatments separately. We provide a full discussion in the appendix.

After the completion of the real effort task, participants were told their relative position compared to the median participant (above or below). They were then asked a series of questions in which they had to declare to which extent they believed that their relative achievement (success or failure) was due to their efforts or to luck. Then, two participants (the *targets*) were randomly selected among all participants of the session.<sup>2</sup> The remaining participants (the *the 'disinterested dictators'*) were informed about the *difference* between the two targets' incomes of the real effort task. The disinterested dictators had then the possibility to redistribute tokens from the wealthier to the poorer target. All participants were told that one decision of a disinterested dictator would be randomly selected and implemented. Participants were also explicitly told that redistribution would concern only the two *targets*, and that all others would not be affected by any redistribution mechanism during this experiment.<sup>3</sup> After every disinterested dictator made her choice, one redistribution proposal was randomly selected, and implemented. Disinterested dictators received their

 $<sup>^{2}</sup>$ In order to ensure comparability among our sessions, the selection process was set as follows. First, we randomly selected the first target. Second, we computed the difference of tokens between the first target and the remaining participants. We then selected a participant such as to have a difference of tokens equal to eight (or, if not, as close to eight as possible).

<sup>&</sup>lt;sup>3</sup>See figure 8 in the appendix for a screen shot of the text displayed to *decision-makers*.

payoff from the real effort task, while targets received their real effort task payoff corrected for redistribution.

We refer to this game as the *disinterested dictator Game*, because the dictator has the power to redistribute, but - different from the dictator game - does not have his own profit at stake. The game is also different from the so-called third party dictator game (Fehr & Fischbacher (2004)), in which the classic dictator game is enriched by a third party who can punish the dictator. A game similar to ours is presented by Konow (2000), who studies the accountability principle. Konow investigates the redistribution choice of a dictator who is either exterior to the real effort task and has no stake in the redistribution, or who participates to the game and has direct stakes in the redistribution. Konow refers to the two treatments as the *Benevolent Dictator Treatment* and the *Standard Dictator Treatment*. In our case, dictators have taken part in the real effort task but have no stake in redistribution.

**Experiment 2: Redistribution System Game** At the beginning of the second experiment participants were given new instructions. In these instructions, participants were told that they were going to be grouped into groups of four, and that they were going to perform a series of tasks which were substantially different from what they did in the first experiment. Participants were also informed that they were going to earn tokens in a new real effort task, but that their payoffs would also be affected by *random shocks*, which could be either welfare increasing or welfare decreasing. Finally, the instructions said that, after each task and after each shock, redistribution was going to occur within each group according to the group's redistribution system.

We presented three redistribution systems to the participants. The *libertarian* system leaves each participant with her *after-shock* payoff (no redistribution). The *egalitarian* system sums up all individual *after-shock* payoffs within the group, and redistributes the sum in equal shares to the group members (full redistribution). Finally, the *social-liberal* system sums up all individual *after-shock* payoffs within the group, and redistributes the sum proportionally to the individual *pre-shock* payoffs (effort-based redistribution). We gave participants an example showing how each redistribution system could potentially affect their final payoffs given pre-shock and after-shock payoffs. Before turning to the vote, we asked participants a few understanding questions to ensure that the three redistribution principles were well understood.

After the presentation of the redistribution systems, participants were grouped into groups of four, and were asked to assign weights between 0 and 10 to each of the three redistribution systems. Participants were told that one group member's set of choices would be randomly chosen, and that the resulting redistribution system for the group would be a weighted mixture of the three systems (as defined by the randomly chosen solution).

After the vote and the determination of the redistribution system participants performed the series of real effort tasks. In this second experiment the real effort tasks consisted of reading a small text (approx 140 words), and count the number of misspelled words. The individual (pre-shock and pre-redistribution) profit to the task was equal to the 20 tokens minus four times the absolute difference between the number of mistakes reported in the text and the real number of mistakes in the text. After each real effort task participants learned their final profit (post-shock, post-redistribution), together with their original profit (preshock, pre-redistribution) and their shocked profit (post-shock, pre-redistribution). Then participants were were asked (1) whether they were satisfied with the implemented redistribution system, and (2) whether they felt reinforced in their original choice. The second experiment ended after four tasks.

This second experiment is inspired by two papers. The real effort task finds its roots in Frohlich & Oppenheimer (1990). In this experiment, the authors make students choose a redistribution system without knowing the nature of the task they are about to perform. Once a redistribution system has been selected, students are given a series of texts to correct (spelling mistakes). This second game is inspired by Gerber et al. (2013), from which we take the three redistribution systems (see literature review for more details).

### 3.2 Hypotheses

Our experimental protocol aimed at investigating how the self-serving bias may impact the demand for redistribution. Our goal consisted in reproducing real-life debates on redistribution, in which citizens have limited information about situations other citizens have faced in their life, but are aware of their relative status in society and the difficulties they faced themselves.

The task of the Disinterested Dictator Game (DDG) created two classes of participants: those who performed better than the median participant (*overachievers*), and those who performed worse than the median participant (*underachievers*). The goal of this categorization was to induce a self-serving bias among participants, by artificially creating a group of successful and a group of unsuccessful participants. The second step of the DDG consisted in measuring the impact of the change of the perceptions of causality on the demand for redistribution. Indeed, as Konow (2000) showed, people decide on redistribution according to the *accountability principle*, i.e. they reward people based on their level of effort. By affecting the perception of the role played by effort in the final outcome, we expect the self-serving bias to affect the demand for redistribution: successful (resp. non-successful) participants will be more likely to believe that efforts (resp. random factors) play a great role in determining one's success, and will therefore be less (resp. more) likely to redistribute.<sup>4</sup>

**Prediction 1** Overachievers will propose a lower redistribution level than underachievers.

At the beginning of the second game, participants were asked to express their preference over three redistribution systems. *A priori*, the self-serving bias theory states that individuals change their perception of the determinants of the outcome of the *particular* task they were confronted to, once they have succeeded or failed. Following this statement, prediction 1 tests whether this change of perception induces a change in the demand for redistribution.

Participants' preferences over the redistribution systems in the second game should a priori not be affected by the SSB, since individuals do not know the nature of the tasks

<sup>&</sup>lt;sup>4</sup>Note that, because decision-makers were not directly affected by redistribution, our protocol allows us to isolate how the demand for redistribution has been altered by the perception of the causes of success without any interference of egoist interests.

they are about to perform, and cannot therefore form beliefs about the relative influence of situational and individual factors on their future outcome. The analysis of the preferences over the redistribution systems in the second game aims at investigating whether the self-serving bias persists *across* tasks. If the self-serving bias changes one's perception of the determinants of success for *all kinds of tasks*, we should expect overachievers to give more (resp. less) weight to non-redistributive (resp. redistributive) systems than underachievers.

**Prediction 2** Overachievers will ask for less redistributive systems and for more non-redistributive systems than underachievers.

## 4 Results

We run four sessions with 24 participants each. All sessions were run in Strasbourg (January and February 2014). The sessions lasted about 40 minutes, and participants earned on average 13.44 euro. In two sessions, all participants who took the easy task turned to be overachievers. In the two remaining sessions, 16% of the participants who took the hard task managed to perform better than the median player, and became therefore overachiever. Note, however, that the SSB can occur whatever the original task a participant was assigned to. Indeed, our protocol induced the same level of information for both underachievers and overachievers regardless of their original task. It follows that participants were not able to deduce *ex post* whether they were assigned to the hard or the easy task, such that only the labeling as 'above the median' or 'below the median' affected their perception of causal attributions.

Figure 1 displays the average number of tokens earned by participants in the first game for both kinds of tasks they were assigned to. As one can see, in all sessions participants who completed the *easy* task earned on average more money than those taking the *hard* task. This phenomenon is clearer for sessions 2, 3 and 4 which display larger gaps between the two groups of participants.

Before turning to the two above predictions, we first start by assessing whether our protocol did induce a self-serving bias among participants. To do so, we compare answers given by the two classes of participants (*overachievers* vs. *underachievers*) for the list of factors which may have influenced their failure or success. Comparing the relative weight given to each factor, we observe indeed strong differences in the perception of causality. The two groups display diverging views about the causes which influenced their outcome for four out of six factors.<sup>5</sup>

### 4.1 Preferences for redistribution

We now investigate the redistribution level chosen by decision-makers. Prediction 1 links indeed the self-serving bias to the level of redistribution. Because redistribution in the first game affects only targets' payoffs, and that decision-makers were specifically told that no redistribution would affect them in this game (see both instructions and screen shot in the

<sup>&</sup>lt;sup>5</sup>The two-sided associated p-values are 0.013 (difficulty of the task), 0.000 (the presentation of the exercise), 0.000 (the clarity of the exercise) and 0.000 (the motivation to complete the task).



Figure 1: Number of tokens obtained at the first game's task (by the difficulty level of the task)



Figure 2: Average redistribution per group per session

appendix), decision-makers were aware that their decision would not affect their own payoff. In other words, the redistribution choices were made in a disinterested way.

Prediction 1 builds on Konow's works on the accountability principle, which states that individuals make redistribution choices considering their beliefs of causal attributions. Indeed, it hypothesizes that an individual will be less likely to vote for redistribution if she believes that relative failure is due to a lack of effort (i.e. endogenously determined). To verify whether prediction 1 holds in our setting, we present the average level of redistribution for all sessions and for both groups of participants in figure 2. As one can see underachievers redistributed on average more than overachievers in all sessions.

To compare underachievers and overachievers across the four sessions, we compute the redistribution *ratio* as the number of tokens redistributed over the total number of tokens available for redistribution. Then, we run a bilateral two-group mean comparison test to determine whether scores are statistically different between overachievers and underachievers. As one can see from table 1, the *ratio* variable averages to .438 for underachievers and to .304 for overachievers. This difference is statistically significant at the 95% confidence level (two-sided p-value: 0.013).

This statistical difference confirms prediction 1: overachievers, who are more likely to perceive one's outcome as determined by effort than underachievers, redistribute less than underachievers.



Figure 3: Results of the permutation test: Sum of *ratio* the artificial and actual group of underachievers.

Because t-tests assume the normality of the variable of interest, we propose an alternative methodology to assess whether overachievers and underachievers differ in their redistribution choice. Instead, we run a permutation test, which randomly reallocates the 'underachiever' status. For each permutation, we then sum the variable ratio for the new (and virtual) underachievers. This allows us to estimate the shape of the probability density function (pdf) of the *sum of ratio* if the underachievers status was randomly determined. Figure 3 displays the estimated pdf. In the observed data, the sum of the *ratio* variable is equal to 19.283. As figure 3 shows, less than 1% of the distribution is on the right of this value. This result implies that, if the underachiever status were randomly distributed, the probability to observe the current or a stronger difference between overachievers and underachievers would be below 1%. This result comforts the conclusions of the two group mean comparison test: the probability that the difference in the *ratio* variable is due to randomness is close to zero.

**Result 1** Relatively successful participants ask for less redistribution for others as a consequence of the self-serving bias, even though they have no information about the task other participants have faced.

### 4.2 Redistribution systems

We now turn to the analysis of the preferences over the redistribution systems in the second game. Because participants were told that the tasks of this second game would be substantially different from the Disinterested Dictator Game's task, they were *a priori* not able to form expectations about the extent to which luck and effort would influence their future payoffs. Prediction 2 hypothesizes that the self-serving bias may not only affect one's perception of the reasons of success or failure to the precise task one has achieved, but may also change one's expectations of the determinants of success or failure to an *unknown* task. To our knowledge, this prediction goes one step beyond the standard literature on the self-serving bias, which only investigates how the bias affects one's perception of the causal attributions for a task an individual has achieved.

In order to determine the validity of prediction 2, we investigate preferences over the redistribution systems for both overachievers and underachievers. We analyze both the absolute and the normalized importance levels given to the three systems.<sup>6</sup> Analyzing the absolute or the normalized importance levels presents different benefits. On the one hand, analyzing the normalized importance levels focuses on the outcome of the procedure, and allows us to get rid of the overall individual propensities to attribute more or less importance to all systems. On the other hand, considering the absolute importance levels allows taking into consideration the absolute preference for one particular system. For instance, an individual who would attribute 0 to two systems and 5 to the remaining system would have the same normalized score as an individual who would attribute 0 to the two first systems and 10 to the remaining system. Note, however, that the second individual would show a stronger adhesion to the third system, which would not be captured by the normalized scores.

Figure 4 displays the average importance level for each of the three systems per success status at the first game.<sup>7</sup> Figure 5 is similar to figure 4 but shows the normalized importance levels.

Figures 4 and 5 display a common pattern: overachievers have on average (1) stronger preferences for the social-liberal system, and (2) weaker preferences for the egalitarianism system. These differences are both significant for the absolute importance levels, and for the normalized importance levels. The difference for the libertarian redistribution system is significant neither for the absolute nor for the normalized importance levels.<sup>8</sup> It seems that preferences for libertarianism is orthogonal to the relative performance at the first game.

These statistical differences show that overachievers display on average stronger preferences for systems which reward effort (i.e. *social-liberal*), and weaker preferences for systems which insure redistribution whatever the effort contribution (i.e. *egalitarianism*). These

<sup>&</sup>lt;sup>6</sup>Participants were asked to express their preferences by assigning scores between 0 and 10 to each of the three systems. These scores constitute the absolute preferences for each system. However, since the retained redistribution system was said to be proportional to the absolute preferences, we are also able to compute the normalized preference scores (which sum up to 1 for each participant).

<sup>&</sup>lt;sup>7</sup>Note that we do not exclude the 'target' participants. Indeed, since the target participants were only aware of their final payoff in the first game (i.e. they did not know whether they benefited or whether they were damaged by redistribution), the effect of the self-serving bias is not altered compared to the rest of the group. We also computed the statistics excluding these observations, and results were nearly identical.

<sup>&</sup>lt;sup>8</sup>The p-values associated to the two-group mean comparison tests are displayed in table 1 in the appendix.



Figure 4: Average importance level per success status.



Figure 5: Average normalized importance level per success status.

results confirm prediction 3.

**Result 2** Participants who were relatively successful in a previous game ask for less redistribution for future (unknown) tasks.

### 4.3 Econometrics

As a robustness check, we propose to verify whether the above results are not driven by unobserved factors. To do so, we propose a multivariate analysis of the redistribution decision of the first stage of the game, and the importance levels of the redistribution systems of the second stage of the game. In our set of explanatory variables, we propose to include the gender of the participant, since it has been found that female participants are more likely to be risk-averse or/and altruistic than male. Second, we propose to control for the political orientation, since redistribution is obviously a political matter very salient for left-right opposition. Third, we include the age of participants. Finally, we also propose to consider the impact of practicing sport regularly at competitions. It might be indeed that high skilled athletes are more likely to perceive their results as the fruit of their efforts.

We run standard OLS regressions for four dependent variables: the ratio of redistribution in the first game, and the importance level given to each redistribution system in the second game. Using the *best* selection method, we present different specifications, which progressively include additional independent variables, based on their explanatory power. We present the C, the AICC and the BIC statistics. Table 2 displays the results for the *ratio* variable. Tables 3, 4 and 5 show respectively the results for the libertarian, the social-liberal and the egalitarian redistribution system importance levels.

Results of the econometric specifications confirm previous findings. The *overachiever* variable is the only significant independent variable explaining the preferences for redistribution of the first game and the demand for the social-liberal system in the second game. Preferences for the libertarian system are mainly driven by the participants' political orientation, while preferences for the egalitarian system are due to the *overachiever* status, the political orientation, and the gender.

### 4.4 Some Evidence on the Dynamics of the Self-Serving Bias

Before discussing the above results, we introduce some elements about the evolution of the self-serving bias in the second game. In the second part of the experiment, participants were asked, after each redistribution phase, to declare to which extent they felt comforted in their original choice (i.e. the importance given to each system). The rationale consists in investigating how participants' beliefs about their original choice were affected by (i) the fact that they benefited from the implemented redistribution system, conditionally on (ii) how distant their original choice was from the implemented system.

To do so, we computed, for each task of the second game: (i) the sum of transfers that took place within the group, (ii) the sum of transfers that would have taken place if a participant's own system would have been implemented, and (iii) the difference between the sum of transfers that really occurred and the sum of transfers that would have occurred if the participant's system would have been implemented (i.e. (i) - (ii)). We label this last variable  $\Delta_{i,t}$  (where *i* stands for participant *i*, and *t* for the task *t* in the second game).  $\Delta_{i,t} > 0$  reflects a situation where individual *i* would have originally wished for a less generous redistribution system for the task *t*. In a subsequent step, we computed the average  $\Delta$ over the four tasks for each individual:  $\Delta_i = \frac{1}{4} \sum_{t=1}^{t=4} \Delta_{i,t}$ .

In order to understand how people felt comforted in their original choice at the end of the game, we propose to estimate the following equation:

$$comfort = \beta_0 + \beta_1 over + \beta_2 \Delta + \beta_3 B + \beta_4 over \times \Delta + \beta_5 over \times B + \beta_6 \Delta \times B$$
(1)  
+  $\beta_7 over \times B \times \Delta$ (2)

where  $B_i$  stands for the total number of tokens individual *i* received from redistribution in the second game, and where *conform* is a variable that ranges from 0 to 10 and that corresponds to the reported level of confidence in the original choice at the end of the second game. Results of this estimation are displayed in table 6 in the appendix.

The marginal effect of benefiting from redistribution is given by:

$$\frac{\partial comfort}{\partial B} = \beta_3 + \beta_5 over + \beta_6 \Delta + \beta_7 over \Delta \tag{3}$$

The marginal effect for underachievers is therefore:

$$\frac{\partial comfort}{\partial B}|_{underachiever} = \beta_3 + \beta_6 \Delta \tag{4}$$

The marginal effect for overachievers is therefore:

$$\frac{\partial comfort}{\partial B}|_{underachiever} = (\beta_3 + \beta_5) + (\beta_6 + \beta_7)\Delta \tag{5}$$

Figures 6 and 7 display the estimated marginal effects of redistribution on *comfort* for underachievers and overachievers respectively. Note that the borns of the x-axis are not the same on both graphs, since the maximum and the minimum values of  $\Delta$  are slightly different across groups. The two figures suggest two different patterns for underachievers and overachievers.

First, figure 6 suggests that underachievers who would have wanted a more generous redistribution system ( $\Delta < 0$ ) are comforted in their original choice when they benefit from redistribution. On the contrary, the negative marginal effect when  $\Delta$  is positive suggests that underachievers who were asking for a less redistributive system doubt their original choice when they benefit from the system. This result is indeed supported by the fact that the negative estimated coefficient  $\beta_6$  is statistically different from zero (see table 6 in the appendix).



Figure 6: Marginal Effects of Benefiting from Redistribution for Underachievers

Second, figure 7 suggests a different pattern for overachievers. The marginal effect of redistribution on *comfort* seems to be positive for all values  $\Delta$ . This would imply, that overachievers are comforted in their original choice when they benefit from the redistribution system. Note however that the marginal effect is only statistically different from zero at the 95% confidence level in the neighborhood of  $\Delta = 5$ , that is to say when overachievers were asking for less redistribution.

Comparing the marginal effects of benefiting from redistribution leads to very interesting results, and suggests that underachievers and overachievers do not update their preferences in the same way when they benefit from redistribution. These results opens some discussion for future research.

## 5 Discussion

The above findings concluded that the self-serving bias influences the demand for redistribution in two ways. First, it affects the *ex post* demand for redistribution, depending on the relative success status of an individual after the completion of a task. Second, it impacts the *ex ante* demand for redistribution, when an individual is confronted to a new task. Moreover, our results also suggest that the self-serving bias induce different behaviors when agents update their beliefs after experiencing a redistribution system.

The following discussion draws from the above results together with previous findings found in the related literature. The external validity of an experimental setting prevents from drawing too broad conclusions from laboratory evidence, but the consequent body of research on this topic points in the same direction.



Figure 7: Marginal Effects of Benefiting from Redistribution for Overachievers

In the light of these concerns, we discuss two influential theories, which have aimed at reducing the problem of self-interest in the case of political decision-making, namely the separation of powers and the veil of ignorance. Both frameworks addressed the question of law-making in presence of self-interested individuals. Theories on the separation of powers primarily dealt with the risks of capture, and are inherently pushing toward lower redistribution levels. On the contrary, theories on the veil of ignorance were, in Rawls' perspective, aiming at implementing a *fair* level of taxation, exempt from self-interests, that would help the poorest individuals in the society.

### 5.1 Theories on the separation of powers

#### 5.1.1 Montesquieu and the three functions of government

In his most influential book, *The Spirit of Laws*, Montesquieu investigates the question of liberty and the institutions, which can effectively guarantee democratic liberties. Montesquieu argues that the very concept of liberty implies limitations, because absolute liberty for some individuals would necessarily entail tyrannical government for others.<sup>9</sup> Montesquieu supports therefore the idea that the state's power must be self-limiting. In his words, 'power should be a check to power'.<sup>10</sup> Montesquieu distinguishes three sources of power, and argues that, whenever an entity holds more than one of them, democratic freedoms are endangered.

 $<sup>^{9}</sup>$  "It is true, that in democracies the people seem to do what they please; but political liberty does not consist in an unrestrained freedom." (The Spirit of Laws, Book XI)

<sup>&</sup>lt;sup>10</sup> "To prevent the abuse of power, it is necessary that by the very disposition of things power should be a check to power." (The Spirit of Laws, Book XI)

The remedy put forward by Montesquieu is to insure that distinct authorities hold each of the three powers.

The institutional framework proposed by Montesquieu is particularly relevant for the question of redistribution, in which property rights are often seen as fundamental rights that need to be protected against the will of the (poor) majority. Division of powers may mitigate the effects of the accession of a majority supporting strong redistribution. In this respect, a higher degree of separation of power may lead to lower taxation rates, since bargaining between the different branches of the government may lead to a reduction of redistribution. Some empirical works have shown indeed that presidential systems (i.e. with higher degrees of separation of powers) are associated to smaller governments (Persson & Tabellini (2004)).

This framework is however very likely to suffer from the self-serving bias. In such an institutional setting, all officials need to be either elected, or appointed by merits. It follows that all officials are highly likely to perceive themselves as *overachievers*. Unlike in our experiment, the repeated successes at local elections, which ultimately lead legislative or executive politicians to the highest positions in a country, are very likely to worsen the self-serving bias. As a result, all branches of the state are expected to be more prompt to believe that success is mainly driven by efforts. Considering the results of our experiment, it follows that public officials, from all branches, will propose lower taxation rates, leading *de facto* to a lower effective taxation rate.

#### 5.1.2 Madison's Republic

In the series of *Federalist Papers*, Madison develops the concept of republic that he opposes to pure democracy. In his view, a republic is 'a government in which the scheme of representation takes place'<sup>11</sup>. Representation implies the delegation of the government to a small number of citizens, and can therefore be applied to large countries. According to Madison, larger states will strengthen competition among politicians, which will ultimately lead to a better selection process.

Madison's main motivation consists in finding a political system that will protect minorities from the majority's tyranny. Following Montesquieu, Madison argues that 'ambition must be made to counteract ambition'.<sup>12</sup> In order to limit the risks of capture, Madison proposes two divisions. The first division follows Montesquieu's argument, and establishes independent branches of government. The second division concerns the society itself: in order to prevent the formation of influential interest groups, society must be divided into many parts.<sup>13</sup>

It is obvious to see that all these mechanisms are likely to lead to lower redistribution levels, compared to a direct democracy in which the median voter theorem would apply. First, the same argument that applies for Montesquieu's separation of powers applies for Madison's republic: division of powers may mitigate the effects of a majority supporting

<sup>&</sup>lt;sup>11</sup>Federalist 10.

 $<sup>^{12}</sup>$ Federalist No. 51

<sup>&</sup>lt;sup>13</sup>"Whilst all authority in [the federal republic of the United States] will be derived from and dependent on the society, the society itself will be broken into so many parts, interests, and classes of citizens, that the rights of individuals, or of the minority, will be in little danger from interested combinations of the majority." Federalist No. 51).

redistribution. Second, the heterogeneity resulting from the division of the society into small parts is likely to affect the demand for redistribution, since more diverse communities are known to ask for less redistribution.

In addition to these two phenomena, Madison's republic is also subject to the effects of the self-serving bias. Because Madison advocates for larger states, competition for the highest offices is very likely to increase. The effect of the self-serving bias will mechanically increase: elected officials in larger countries have faced harsher competition, and are therefore more likely to believe that their election is due to their effort rather than to luck, leading *in fine* to lower redistribution levels.

### 5.2 Veil of Ignorance

#### 5.2.1 Rawls and the Veil of Ignorance

The starting point of the Rawlsian theories of redistributive justice is the fiction of the *veil* of ignorance. In Rawls' eyes, redistribution should be decided under a veil of ignorance, that is to say in complete ignorance about one's own identity, in order to get rid of selfish interests. Rawls argues indeed that, if redistribution decisions were to be made in this way, the implemented level of redistribution would correspond to the *fair* level of redistribution, and everyone would agree on the notion on fairness.

This first version of the veil of ignorance has received harsh criticisms. Although this veil of ignorance was primarily meant to be a thought experiment, many scholars have pointed out that individuals are not able to abstract from their identity, and to think in a disinterested manner. The criticism that follows from our results goes one step further: even when people are in complete ignorance about what will happen (second part of our experiment) or when they have no interests at stake in the redistribution (first part of our experiment), they perceive causality in different ways because of their past experience (overachiever vs. underachiever), and this, in turn, affects their redistribution preferences. In other terms, Rawls' thought experiment fails in so far as it assumes that the beliefs of fairness are similar across individuals once they have got rid of their individual interests. However, our results, in line with the literature on the self-serving bias, suggest that this does not hold because of the various perceptions of causality.

#### 5.2.2 Buchanan and Uncertainty about the Future

Recognizing that individuals are not able to abstract from their identity, Buchanan has proposed an augmented version of the veil of ignorance. Buchanan proposes to introduce uncertainty by considering future positions in life. By doing so, he argues that individuals will come to think in a disinterested manner.

This augmented version of the veil of ignorance has however found a limited empirical support. Several reasons can explain the failure of Buchanan's veil of ignorance. First, it might be that individuals form expectations about their future identity relying on their current identity. Second, it may be that agents display very high discount rates, and value therefore the present –in which they know their identity- much more than the future. Third, it follows from our results that successful individuals believe that success is due to their efforts: they are therefore likely to believe that their future efforts will help them to maintain their relatively high social status.

Following Vermeule, Voigt (2013) discusses five ways to introduce uncertainty, and therefore to come closer to the fiction of the veil of ignorance. The first solution is similar to Buchanan's proposal, i.e. to consider future events only. The second idea consists in constraining legal rules to make general statements only. A third alternative is to force legal rules to have long-term effects. A fourth solution is to delay the enforcement of the legal rules. Finally, a fifth idea consists in randomizing the persons who will be subject to the legal rules. All these mechanisms aim either at increasing (rules 2, 3, and 5) or decreasing (rules 1, 4, and 5) the probability for decision-makers to be affected by the decision they make.

Although these mechanisms are very likely to mitigate selfish interests in the decisionmaking process, and might lead to more redistribution, none of them is robust to the selfserving bias. The self-serving bias is indeed expected to create a general downward bias in the demand for redistribution for all politicians. Mitigating the role of self-interests in the decision-making process does not, however, compensate the effects of the bias.

## 6 Conclusion

Our paper aimed at investigating the consequences of the self-serving bias on redistribution choices. To isolate the effects of the self-serving bias from selfish interests, we run an experiment in which participants had no information about the situation other participants faced, but had some information about their relative success status. This set-up was enough to induce self-serving biases among participants.

We came up with two far-reaching results and some evidence calling for future research. First, we showed that participants with a good relative success status were asking for less redistribution after the completion of their task, because they were on average more likely to believe that their outcome resulted from their efforts compared to participants with a low relative success status. Second, we showed that the self-serving bias affected more than the perception of the completed task, and also modified the demand of redistribution for future (unknown) set-ups. Finally, we displayed some evidence suggesting that the self-serving bias might also affect how individuals update their beliefs when they experiment a redistribution system.

Our findings have significant implications for political debates on redistribution. When deputies discuss wages or capital taxes at the Congress, they often make a trade-off between the necessity of insurance against random events (luck) and the risks of moral hazard (effort). More globally, national debates on redistribution are usually made in the light of these two arguments, and Alesina & Angeletos (2005) have showed how common beliefs on these topics indeed affect redistribution policies. The main problem lies in the fact that policy-makers deal with limited information about the situation people in need have faced in the past: it is therefore impossible to figure out whether poverty resulted from a lack of effort or from bad luck. In this regard, our findings show that, in addition to selfish interests, such debates may be biased by personal experience, i.e. relative success. Our results show that, even in this precise case of limited information, individuals don't share the same beliefs on the determinants of individual situations. In simpler words: successful and less successful individuals do not share the same reality.

Our results lead to pessimistic implications for the institutional question. Indeed: because of the very nature of the political process, in which elected officials are *winners* of previous elections, politicians are likely to be subject to the self-serving bias. The discussion reviewed two influencing theories of political philosophy (the separation of powers, and the veil of ignorance), and showed that none of them was robust to the self-serving bias critique.

## A Statistics

Variable	All Participants	Underachievers	Overachievers	p-value
ratio	.371	.438	.304	0.013
${ m importance Libertarian}$	3.927	3.625	4.229	0.416
importance Social Liberal	7.427	6.792	8.25	0.039
${ m importance} { m Egalitarian}$	5.052	6.291	3.813	0.001
${\it normImportLibertarian}$	.226	.209	.244	0.443
normImportSocialLiberal	.465	.401	.529	0.006
normImportEgalitarian	.309	.390	.227	0.002

Table 1: Summary Statistics (mean). P-values correspond to bilateral two group mean comparison tests.

## **B** Additional Tables

Model	1	2	3	4	5
overachiever	-0.135**	-0.134**	-0.132**	-0.131**	-0.146**
	(0.0532)	(0.0534)	(0.0540)	(0.0543)	(0.0556)
sport		-0.0408	-0.0420	-0.0441	-0.0223
		(0.0608)	(0.0613)	(0.0620)	(0.0645)
age			-0.00218	-0.00161	-0.00198
			(0.00855)	(0.00878)	(0.00876)
$polit_orient$				0.00415	0.00334
				(0.0130)	(0.0130)
gender					-0.0696
					(0.0588)
Constant	$0.438^{***}$	$0.571^{***}$	$0.623^{**}$	$0.596^{*}$	$0.656^{**}$
	(0.0376)	(0.201)	(0.286)	(0.300)	(0.304)
Observations	88	88	88	88	88
R-squared	0.069	0.074	0.075	0.076	0.091
С	.01247	.23748	2.1470	4.0508	6
AICC	257.46	257.78	259.93	262.14	264.45
BIC	12.40	15.003	19.384	23.758	28.180

Table 2: OLS regression of the ratio of redistribution in the first stage. Standard deviations in parentheses. \*\*\*p<0.01, \*\* 0.01< p<0.05, \*0.05< p<0.10

Model	1	2	3	4	5
polit_orient	0.601***	0.618***	0.626***	0.620***	0.598***
	(0.163)	(0.163)	(0.164)	(0.166)	(0.170)
overachiever		0.836	0.915	0.897	0.916
		(0.694)	(0.707)	(0.714)	(0.717)
gender			0.458	0.392	0.370
			(0.722)	(0.761)	(0.765)
sport				0.238	0.249
				(0.837)	(0.840)
age					-0.0686
					(0.114)
Constant	0.936	0.433	-0.380	-1.015	0.606
	(0.881)	(0.973)	(1.610)	(2.758)	(3.862)
Observations	96	96	96	96	96
R-squared	0.127	0.140	0.144	0.145	0.148
$\mathbf{C}$	.255137	.83803	2.4421	4.0879	6
AICC	781.77	782.46	784.27	786.17	788.40
BIC	514.20	517.28	521.428	525.61	530.08

Table 3: OLS regression of the importance given to the *libertarian* redistribution system. Standard deviations in parentheses. \*\*\*p<0.01, \*\* 0.01<p<0.05, \*0.05<p<0.10

Model	1	2	3	4	5
overachiever	1.271**	1.315**	1.418**	1.431**	1.440**
	(0.605)	(0.609)	(0.619)	(0.624)	(0.628)
$polit_orient$		0.119	0.129	0.132	0.121
		(0.143)	(0.143)	(0.145)	(0.149)
gender			0.594	0.642	0.631
			(0.631)	(0.666)	(0.670)
sport				-0.172	-0.166
				(0.732)	(0.736)
age					-0.0338
					(0.0999)
Constant	$6.792^{***}$	$6.179^{***}$	$5.124^{***}$	$5.582^{**}$	$6.380^{*}$
	(0.428)	(0.853)	(1.409)	(2.413)	(3.384)
Observations	96	96	96	96	96
R-squared	0.045	0.052	0.061	0.061	0.063
С	28773	.95784	2.1687	4.0509	6
AICC	755.83	757.21	758.61	760.76	763.03
BIC	<b>488.26</b>	492.03	495.76	500.20	504.71

Table 4: OLS regression of the importance given to the *liberal-social* redistribution system. Standard deviations in parentheses. \*\*\*p<0.01, \*\* 0.01< p<0.05, \*0.05< p<0.10

Model	1	2	3	4	5
overachiever	-2.479***	-2.616***	-2.879***	-2.904***	-2.916***
	(0.732)	(0.720)	(0.719)	(0.722)	(0.728)
$polit_orient$		-0.366**	-0.391**	-0.364**	-0.367**
		(0.169)	(0.167)	(0.171)	(0.173)
gender			-1.516**	-1.492**	-1.538*
			(0.734)	(0.736)	(0.777)
age				0.0866	0.0860
				(0.115)	(0.116)
sport					0.167
					(0.853)
Constant	$6.292^{***}$	8.181***	$10.87^{***}$	8.789***	8.355**
	(0.517)	(1.010)	(1.638)	(3.222)	(3.924)
Observations	96	96	96	96	96
R-squared	0.109	0.152	0.189	0.194	0.195
С	7.5702	4.79790	2.5965	4.038	6
AICC	792.17	789.64	787.51	789.20	791.49
BIC	524.61	524.46	524.67	528.64	533.16

Table 5: OLS regression of the importance given to the *egalitarian* redistribution system. Standard deviations in parentheses. \*\*\*p<0.01, \*\* 0.01<p<0.05, \*0.05<p<0.10

Dependent Variable	Comfort		
	Coefficient	St. Errors	
overachiever	.0970	.4124	
$\Delta$	.1660	.1352	
В	.0560	.0610	
overachiever $\times \Delta$	3725	.2262	
overachiever $\times$ B	.01013	.0849	
$B \times \Delta$	03840**	.01882	
overachiever × $B \times \Delta$	.04111*	.0216	
Constant	$4.692^{***}$	.2965	
R	0.1280		
$\# \mathrm{obs}$	96		

Table 6: OLS regression of comfort. Robust standarderrors. \*\*\*p<0.01, \*\*0.01<p<0.05, \*0.05<p<0.10

## C Comparison of the STANDARD and GAP treatments

Our protocol contained two treatments aiming at creating distinct levels of task difficulty: the STANDARD and the GAP treatments. The STANDARD treatment was implemented in the two first sessions, while the GAP treatment was applied in the two remaining sessions.

The only variation between the two treatments is the difference in the difficulty between the tasks (the *easy* and the *hard* tasks). Compared to the *STANDARD* treatment, the *GAP* treatment generated more simple *easy tasks* and more complex *hard tasks*, leading to a greater difficulty gap between the two tasks. The original purpose of the treatments was to assess whether the intrinsic difficulty level of a task affected the intensity of the self-serving bias. In order to compare the two treatments (i.e. *ceteris paribus* condition), we kept the level of information identical across treatments: at no point in the session participants were able to tell whether they had received the *easy* or the *hard* task.

As far as the results are concerned, two observations can be made.

First, we observed a one-to-one relationship in the GAP treatment: participants who were assigned to the *hard* task became *underachievers* while those who took the *easy* task turned out to be *overachievers*. In the *STANDARD* treatment, the one-to-one relationship did not hold: few participants who took the *hard* task succeeded in performing better than some participants who received the *easy* task. Indeed, about 16% of the hard-task takers performed better than the median.

Second, results in the rest of the experiment were not different between the comparable groups. For instance, comparing easy-task takers who turned to be *overachievers* in both treatments shows no difference in the preferences for redistribution. Table 7 gives a full comparison between comparable groups. As one can see, no two-group mean comparison test yields a statistical difference across comparable groups at the 95% confidence level.

	Overachievers with easy task			Underachievers with hard task		
	standard gap P-value		standard	gap	P-value	
	(mean)	(mean)		(mean)	(mean)	
ratio	.362	.278	.307	.467	.402	.438
Libertarianism	.183	.286	.141	.199	.208	.89
Social-Liberal	.257	.221	.611	.36	.421	.458
$\operatorname{Egalitarianism}$	.56	.493	.394	.441	.371	.236

Table 7: Comparison of comparable groups across treatments. All variables are normalized. P-values correspond to the two-group mean comparison tests.

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Vous avez été choisi comme tierce partie pour redistribuer entre deux individus. Bien qu'ils n'aient pas nécessairement été confrontés au même test, les participants A et B ont été sélectionnés aléatoirement pour faire éventuellement l'objet d'une redistribution de richesse. A l'heure actuelle, le participant A possède 16 ECU de plus que le participant B.

Comment souhaitez-vous distribuer les points supplémentaires obtenus par le participant A?

(Veuillez noter que votre décision n'aura aucun impact sur votre propre profit, et que vous ne ferez vous-même pas l'objet de redistribution dans cette partie du jeu.)

Nombre de points supplémentaires laissés à A:

Nombre de points transférés à B:

Figure 8: Screen Shot: Redistribution Decision in the Disinterested Dictator Game

## **First Part - Instructions**

### Hello everyone!

You are about to take part to an experiment, and we are very thankful for your participation. This experiment is made of two parts. This instruction sheet refers to the first part of the experiment only. Instructions for the second part will be given to you at the end of this first part. If instructions turn to be unclear, or if a question remains unanswered, please raise your hand and wait for an instructor to come.

This experiment is made of both individual decisions and group interactions with other individuals in the room. At some points in the game, your decisions may affect others' payoffs, and reciprocally. For this reason, it is strictly forbidden to communicate during the entire experiment. In case of breach of this rule, we will be forced to expel you from the room.

During this experiment, you will earn ECU (*Experimental Currency Unit*). At the end of the experiment, the total number of ECU that you will have gained will be converted into EURO. The conversion rate is 5 ECU for 1 EURO.

The first part of the experiment proceeds in several steps. First, you will be randomly assigned to a task. In this task, you will be asked to count the number of 1 in series of 0 and 1. Your performance will be timed, and your gains will depend on the number of correct answers you will give. The assigned task will possibly be either *easy* (50% chances) or *hard* (50% chances). Both kinds of tasks contain the same number of ECU to win.

#### *Example:* 011010. *This series of digits contains 3 ones. The correct answer is 3.*

Once all participants have completed their task, you will be asked to answer few questions. Then, two participants (the *targets*) will be randomly selected. The first part of the experiment will end at this point for the two *targets*. The remaining participants (the *judges*) will learn the difference of ECU between the two target participants, and will have the opportunity to transfer ECU from the wealthiest to the poorest participant.

*Example: Participant A owns 8 ECU more than B. How many of these ECU are you willing to transfer to B? The answer must lie between 0 (no redistribution) and 8 (total transfer).* 

Once all *judge* participants have chosen a level of redistribution, a solution will be randomly drawn, and will be implemented for the two *targets* only.

To sum up, the first part of the experiment unfolds as follows:

- 1) All participants are randomly assigned to a task;
- 2) All participants do their task;
- 3) Participants answer few questions;
- 4) Two participants are randomly selected (*target* participants);
- 5) The difference of ECU between the two *targets* is displayed to the *judges* who decide on the allocation these ECU;
- 6) One redistribution proposal is randomly selected;
- 7) All participants learn their final payoff. It is equal to their performance to the task for the *judges*, and equal to the performance affected by the randomly selected redistribution solution for the *targets*.

## **Second Part - Instructions**

The second part of the experiment is about to start. In this part, you will be asked to complete a series of tasks. These tasks are substantially different from what you have done in the first part of this experiment. Your profit for each task will depend on both your effort (the number of ECU received at the task) and a random component (a positive or negative *choc*).

At the beginning of this part, you will be randomly grouped with 3 other participants. Once the group is formed, it will remain identical until the end of the experiment. Before the beginning of the second task, your group will be asked to choose a redistribution rule. The retained redistribution rule will be implemented after each task: it will determine the way to reallocate the sum of all profits made by the group at each period. Note that tasks are played individually.

You will be asked to choose among the three following redistribution systems:

- 1) The **libertarian** rule corresponds to a situation without redistribution: each participant keeps the ECU he obtained at each task.
- 2) The **egalitarian** rule corresponds to a situation with full redistribution: all ECU obtained by the group members are reallocated in equal shares among group members.
- 3) The **social-liberal** system corresponds to a situation with partial redistribution: all ECU obtained by the group members are reallocated proportionally to individual efforts.

Each participant will be asked to decide on the **importance** he wants to give to each of the three systems presented above to define the group redistribution system. One solution among the group members will then be randomly selected and implemented for the group until the end of the experiment.

*Example: One group of four participants obtained the following outcomes at the assigned task: participant A, B and C obtained 4 ECU, while participant D obtained 6 ECU. After a random shock, participant A obtains 3 ECU, and B,C and D obtain 5 ECU each.* 

Participant	Number of ECU obtained at the task	Number of ECU after the shock	Payoff if full <b>libertarian</b> redistribution system	Payoff if full <b>social-liberal</b> redistribution system	Payoff if full <b>egalitarian</b> redistribution system
Α	4	3	3	4	4,5
В	4	5	5	4	4,5
С	4	5	5	4	4,5
D	6	5	5	6	4,5